

## ABSTRACT OF THE DISCLOSURE

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3       An improved imaging array (and corresponding method of operation) includes a plurality  
4 of heterojunction thyristor-based pixel elements disposed within resonant cavities formed on a  
5 substrate. Each thyristor-based pixel element includes complementary n-type and p-type  
6 modulation doped quantum well interfaces that are spaced apart from one another. Incident  
7 radiation within a predetermined wavelength resonates within the cavity of a given pixel element  
8 for absorption therein that causes charge accumulation. The accumulated charge is related to the  
9 intensity of the incident radiation. The heterojunction-thyristor-based pixel element is suitable  
10 for many imaging applications, including CCD-based imaging arrays and active-pixel imaging  
11 arrays.